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contd

24. The process of claim 22 wherein the CHP concentration is monitored by on-line analysis.

25. The process of claim 23 wherein the CHP concentration is monitored by on-line analysis.--

### DISCUSSION

New claims 9-21 are presented in view of recently issued U.S. Patent 5,254,751 to Zakoshansky, issue date October 19, 1993, and assigned to General Electric Company (Zakoshansky '751).

Support for these claims and key terminology used therein is as follows:

Support for the phrase "in a non-isothermal manner" in claims 9-14 and 20 is provided in the specification in the sentence bridging pages 7 and 8, "If...a back-mixed reactor is employed, there will exist gradients of temperature...the magnitude of which will depend on the reactor geometry and recirculation ratio". The non-isothermal character of the reaction disclosed in Sifniades U.S. Patent 4,358,618 and in the instant application is recognized in contrast to isothermal operations wherein the reaction would be carried out under refluxing acetone, which is acknowledged in Zakoshansky '751 at column 4 lines 28-37. Zakoshansky '751, in claim 1, defines the improvement as comprising "decomposing cumene hydroperoxide in a non-isothermal manner" and finds support in Zakoshansky '751 in Figure 1 and in examples 1-4 that describe the temperature ranges of "sequentially installed reactors." It should be recognized that Figure 1 of Zakoshansky '751 represents essentially a back-mixed reactor.

At page 6 lines 26 to 28 of the instant application, we disclose the amount of acetone added is from about 10 percent to about 100 percent in excess of the amount produced during the reaction. Since phenol and acetone are produced in substantially equimolar amounts, this corresponds to a molar ratio of acetone to phenol equal to from about 1.1:1 to 2.0:1. Applicants' examples 1-6 in Table I, page 12, show acetone recycle of 40% and 60%, which correspond to a molar ratio of acetone to phenol of 1.4:1 and 1.6:1 respectively.

Support for claim 10 is provided at page 5 line 29-34 and page 6 lines 5-9. The "multiplicity of separate sequential reactors each with a controlled temperature

range" in conjunction with the figure 1 and the text at column 4 lines 62-65 of Zakoshansky '751 is another way of describing a back-mixed reactor with multiple heat exchangers in series.

Support for claim 11 is found at page 6 line 12 of the specification.

Support for claim 12 is found at page 6 lines 15-16.

Support for claim 13 is found at page 7 lines 13-14.

Support for claim 14 is found at page 5 lines 33-34.

Support for claim 15 is found at page 4, "Summary of the Invention".

Support for claim 16 is found at the sentence bridging pages 7 and 8 of the instant specification. Figure 1 of the application shows mixing the feedstream 4 with the recycle stream through heat exchanger 6. In a back-mixed reactor, it is understood that downstream reaction products are recycled back to a point of introduction of feedstream.

Support for claims 17 and 20 are found at page 6, lines 26-28.

Support for claims 18 and 19 are found at page 7 lines 7-12.

Support for claim 21 is found at page 6 lines 1-4 and lines 18-22, and page 10 lines 8-9 and figure 1.

Claims 22-25 have been reintroduced into the application and correspond to claims 1, 2, 7 and 8 which were appealed in the Notice of Appeal dated May 21, 1990. These claims are more specific embodiments of the broader generic claims 9, 15, 19 and 20 offered above. Similarly, claims 1, 2, 7 and 8, which are still in the application are considered to be more specific embodiments of broader generic claims 9, 15, 16, 17, 18, 19, 20 and 21. It is respectfully noted that the data of applicants examples which are plotted in figure 2 anticipates and discloses the very trends demonstrated in the examples of Zakoshansky '751.

Serial No. Unknown Being Concurrently Filed Herewith (File Wrapper Continuation 2 of Serial No. 07/920,811 Filed July 24, 1992)

Please note that this application is a file-wrapper continuation of application Serial No. 07/920,811 filed July 24, 1992, which was a file wrapper continuation of application Serial No. 07/297,333 filed January 17, 1989, which is substantially earlier than the September 14, 1992 filing date of Zakoshansky '751.

In light of the above amendment and the showing of support in the specification for new claims 9-21, together with the assertion that claims 1, 2, 7 and 8 and 22-25 are more specific embodiments of the broader generic claims represented in claims 9-21 together with the remarks herein and the newly issued patent to Zakoshansky, these claims should be allowed.

Respectfully submitted,  
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William H. Thrower

SIGNATURE

February 28, 1994

DATE